

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Aitkin Iron Works Inc

Minnesota Technology Inc.

A New Facility And A New Philosophy At Aitkin Iron Works

Client Profile:

Aitkin Iron Works, Inc. is a private, family-owned company providing machining, welding, and fabricating services to a diverse national and international market. Major customers include Caterpillar, Case, and DeZurik. Aitkin Iron Works was established in 1946 in the north-central Minnesota city of Aitkin. With a full-time staff of approximately 70 employees, the company continues to work toward its goal of meeting customer expectations by utilizing the latest technology in machining, turning, and welding equipment to provide quality, on-time, cost-effective products.

Situation:

When Aitkin Iron Works' (AIW) plans for growth exceeded the existing facility's capacity, the company began the process of planning a new manufacturing facility. The company was immediately challenged by the logistics of combining 11 separate facilities housing different operations into one building. In addition to planning a facility incorporating flexibility with room for future expansion, AIW wanted to implement formal material resource planning and control systems, quality improvement, and work force training programs. Aitkin Iron Works has worked with Minnesota Technology, Inc. (MTI), a NIST MEP network affiliate, since 1994 and relied on that relationship as it embarked on its building project. The company additionally sought MTI's assistance with software selection to provide necessary production and inventory control systems, and training key employees in lean manufacturing to reduce costs and inventory while increasing efficiencies and profitability.

Solution:

MTI engaged the services of two Industrial Engineering faculty members at the University of Minnesota-Duluth College of Science and Engineering to help AIW generate design options for a new facility. The team presented 15 different options and the blueprint selected by AIW for the new plant emphasized cellular manufacturing technology, safety, a quality work environment, and flexibility. MTI then used the SoftSelect diagnostic software tool to assess the company's information system requirements, compare those requirements to its current software and determine if the current software was capable of supporting the company's information needs. Given the challenges presented by AIW's growth plans, MTI also conducted a financial assessment, analyzed the results, and made recommendations regarding future financial decisions.

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MTI facilitated lean manufacturing training for AIW's employees, and created a company-to-company value stream map for certain production areas to make materials flow between AIW, its suppliers, and customers. This map helped create an operations strategy aligned with AIW's business growth objectives of significantly increased sales and cost savings and enhanced employee deployment. The value stream mapping project led to the realization that AIW would benefit from kaizen events to specifically reduce set up time and quality control inspection time in its production process.

In 1999, AIW relocated to a new 95,000 square foot facility and its work is now systematically organized in one building with improved control over materials and workflow, which in turn improves overall plant efficiency and increases output. The new facility implements the latest technology and incorporates welding, machining, fabrication, painting and washing under one roof.

Results:

Successfully relocated to a new 95,000 square foot facility.

Reduced raw material inventory by 15 to 20 percent.

Reduced first pass inventory parts per thousand from the mid-40s to single digits.

Reduced the break-even point from \$1.2 million in sales per month prior to less than \$900,000.

Maximizing the features of existing software.

Reduced the amount of time it takes to set-up a piece of fabrication production equipment by 50 percent.

Reduced inspection time by 75 percent.

Increased throughput by an additional 15 to 20 percent and ultimately reduced raw material inventory and the bottom line necessary to maintain company profitability.

Testimonial:

"The results at Aitkin Iron Works are great examples of what a productive effect Minnesota Technology, Inc. can have on a company. Each service provided by Minnesota Technology, Inc. has resulted in reduced cost, reduced inventory, and increased savings. Their work has helped Aitkin Iron Works keep going in a very tough market and has helped cushion a business downturn by showing us how to become leaner and more efficient."

Jeffery Chatelle, President